

Facts About the Northeast Energy Direct (NED) Natural Gas Pipeline

What is it?



Do we need it?

What's the financial benefit?

Are there better options?

What is it?

*What's the route through NH?
What's the route through Merrimack?
Is it different from existing pipelines?*

Do we need it?

What's the financial benefit?

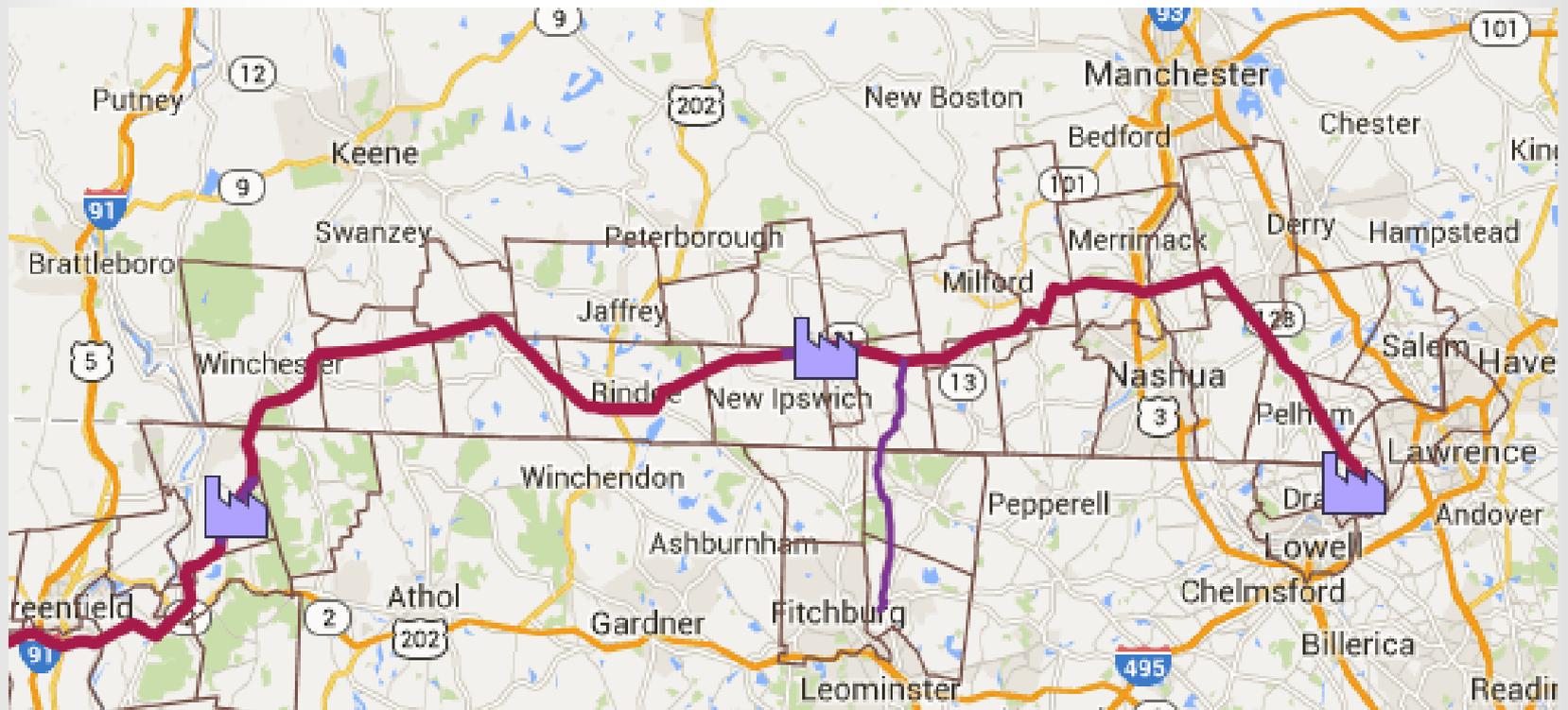
Are there better options?

Citizens' concerns

Summary

What is Northeast Energy Direct (NED)?

- A proposed 36" 1460 PSI underground pipeline to carry natural gas from Pennsylvania to Dracut, MA.
- Proposed by Kinder Morgan (KM), the largest private pipeline company in the US, and Tennessee Gas Pipeline, a KM subsidiary.

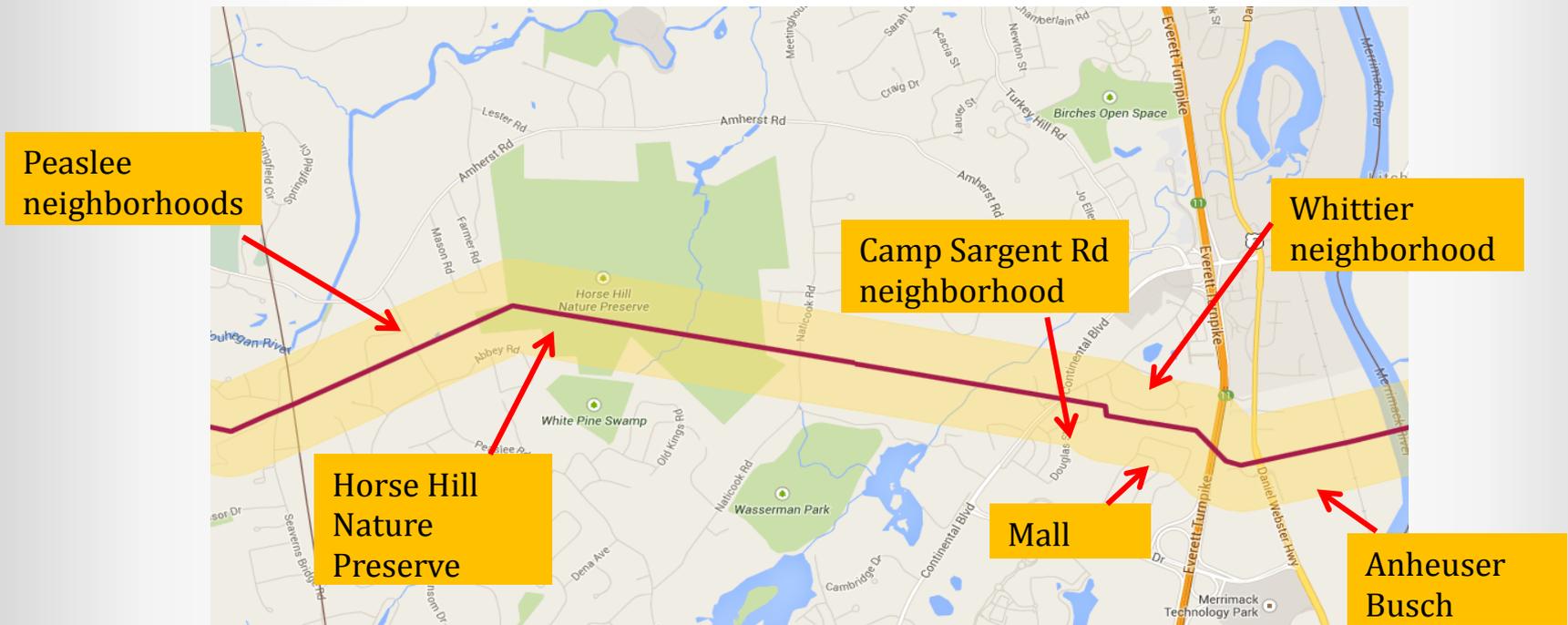


The purple shapes represent possible compressor station locations identified by KM. ¹

The Route Through Merrimack

The current route for the pipeline enters Merrimack near Peaslee Road and exits under the Merrimack River near Anheuser Busch. The route has changed many times and is likely to change again.

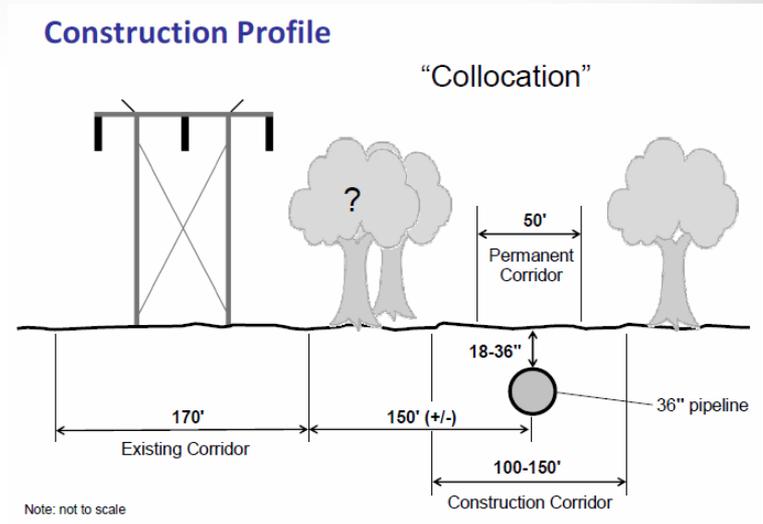
There would **not** be any distribution lines delivering gas to Merrimack.



The yellow/orange highlighting indicates the Potential Impact Area, which is the distance at which “death, injury or significant property damage could occur” during an explosion. For a 36” 1460 PSI pipe, the Potential Impact Area is 1902’ (951’ on each side of the pipeline).²

Will it be Under the Power Lines?

- Due to electromagnetic interference, it **can't** be under the power lines.
- NED requires a permanent 50' cleared corridor (100' to 150' during construction).¹



Facility ID	Co-Location Type	Owner/Operator	Milepost ¹		Length (miles)	Township	County	Width of Existing ROW (ft) ³	Width of Existing ROW To Be Used During Construction (ft) ⁴	Width of Existing ROW To Be Used During Operation (ft) ⁵
			Begin	End						
Wright to Dracut Pipeline Segment (New Hampshire Portion)	Powerline	Public Service of New Hampshire	158.78	162.25	3.47	Brookline, Milford, Amherst	Hillsborough	TBD	15	0
	Powerline	Public Service of New Hampshire	162.71	163.70	0.99	Amherst	Hillsborough	TBD	15	0
	Powerline	Public Service of New Hampshire	164.97	168.81	3.84	Amherst, Merrimack	Hillsborough	TBD	15	0
	Powerline	Public Service of New Hampshire	169.87	172.69	2.82	Litchfield, Londonderry	Hillsborough, Rockingham	TBD	15	0
	Powerline	Public Service of New Hampshire	173.21	179.72	6.51	Londonderry, Hudson, Windham, Pelham	Rockingham, Hillsborough	TBD	15	0

Is It Different From Existing Pipelines?

Existing lines are Distribution Lines (typically 12").
The proposed line is a 36" Transmission Line that requires:



Compressor stations

1 min in NH, prob New Ipswich



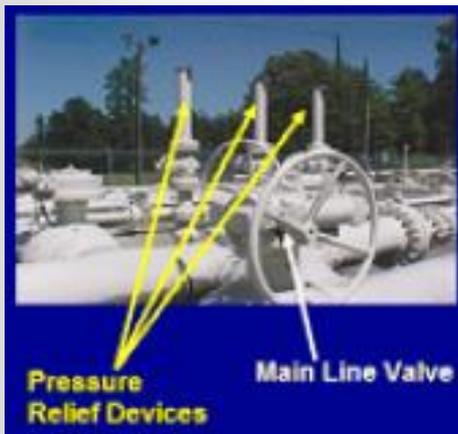
Metering stations

1 min in NH, prob Amherst



Pigging facilities

Approximately 2 in NH



Main line valves

At least every 10 miles , closer in some areas, in a 25' by 25' fenced graveled area within KM's ROW. Permanent access roads to these sites will be required. ¹ Approximately 7 in NH

Blow down valves

between main line valves.
Approximately 7 in NH



What is it?

Do we need it?

Who uses natural gas?

Do we need more now?

Will we need more in the future?

What 's the financial benefit?

Are there better options?

Citizens' concerns

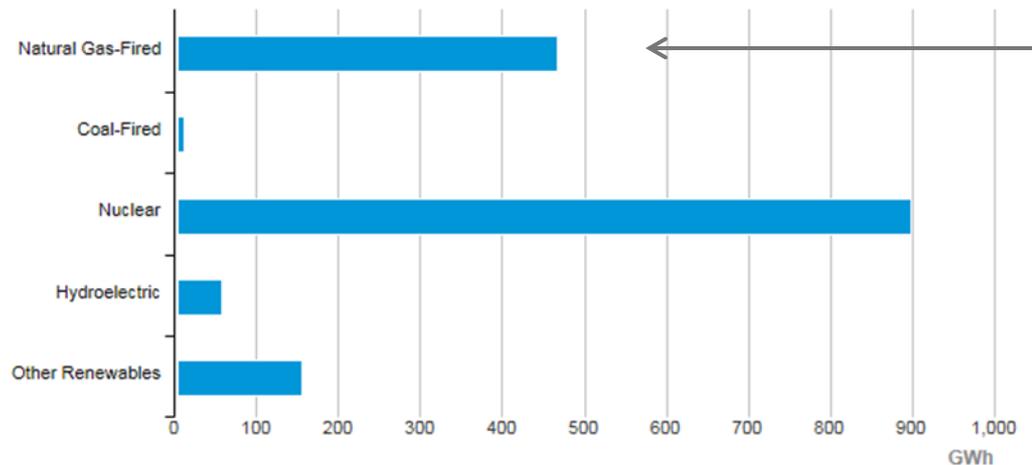
Summary

Who Uses Natural Gas?

Natural gas is used in two ways:

- Heating. Gas used for heating (residential, commercial and industrial) always gets first priority, so there's **never a shortage of natural gas for heating.**
- Electricity. 29% of NH's electricity is generated using natural gas. 71% is generated using other energy sources.³

New Hampshire Net Electricity Generation by Source, Sep. 2014

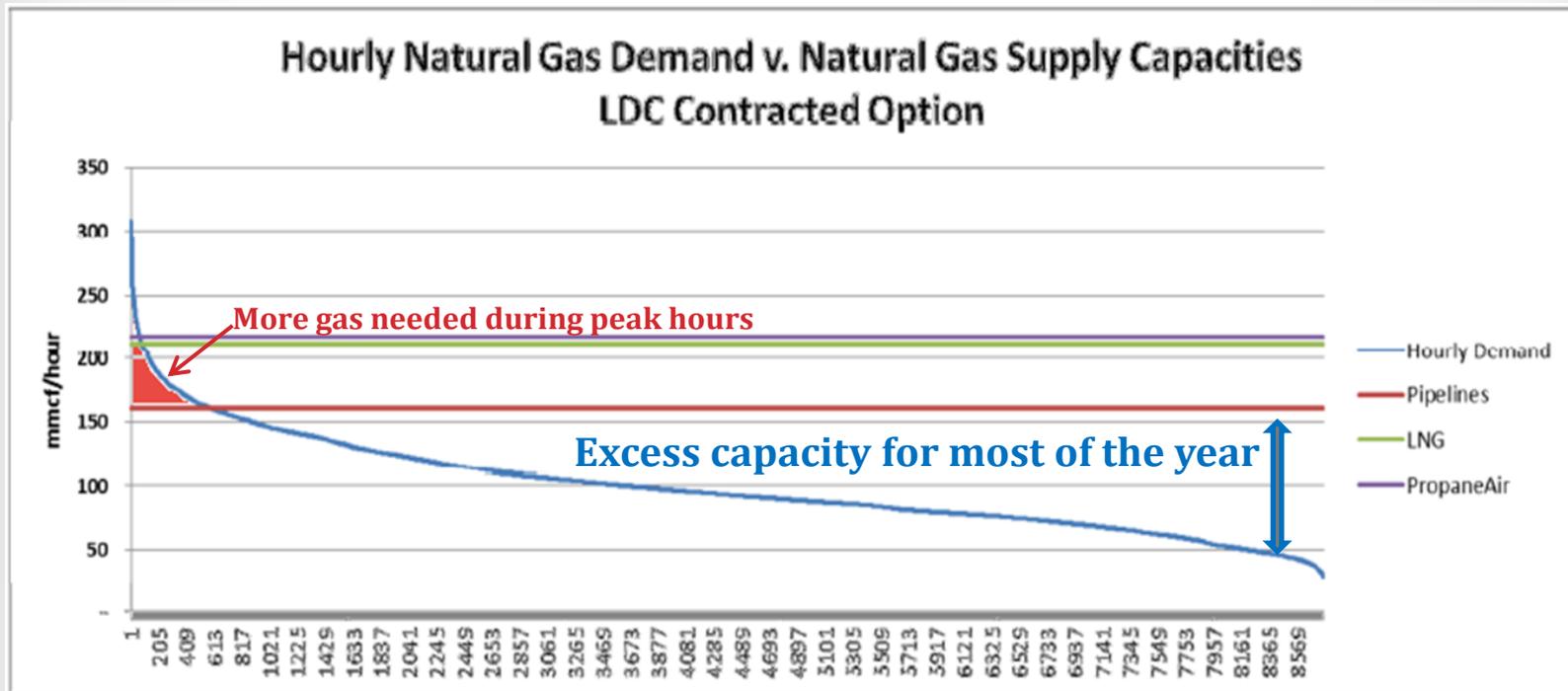


29%
NH electricity
from natural
gas

Do Electric Generators Need More Gas?

For most of the year, NH produces excess electricity and actually **sells 75 Trillion BTUs per year**.

Looking at the whole New England region, after the AIM and CT pipeline expansions are complete, New England will need extra gas during peak hours of the winter. ⁴ We can use liquefied natural gas (LNG) or oil during these peak hours. LNG is more expensive than NG.

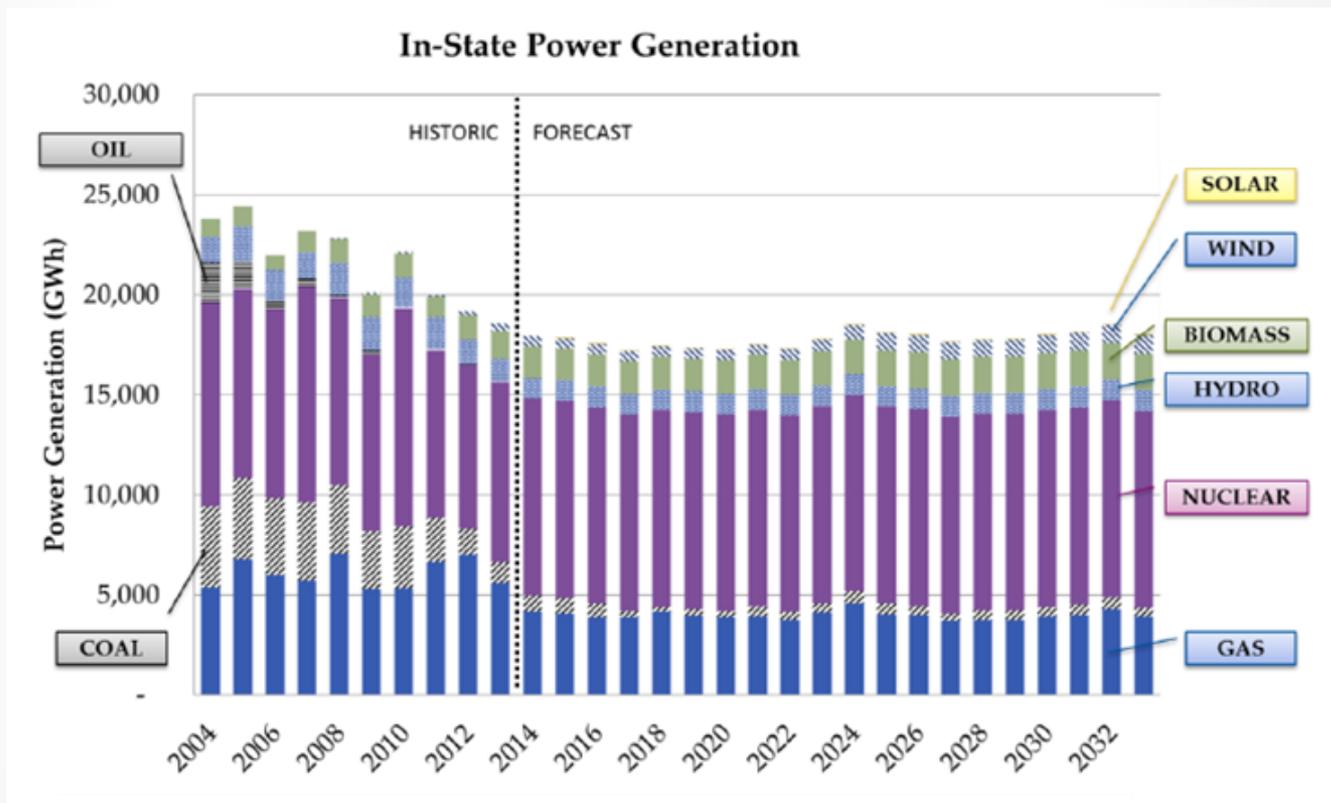


* 2013 winter temperatures used as a baseline

** 71% of NH electric generators and 50% to 60% of regional generators *don't* use natural gas and aren't affected by this. This graph shows regional need.

Will We Need More in the Future?

According to the NH Office of Energy & Planning,
NH will **NOT** need more natural gas
to fuel our electric generators in the coming decades.³



- This graph represents NH's needs only. Other states might choose other future energy sources.
- Total power generation is expected to remain predominantly flat over the forecast period, as increasing in-state demand is offset by lower net exports, which is attributed to increasing energy efficiency in neighboring states.³

What is it?

Do we need it?

What's the financial benefit?

Will NED lower gas prices?

Will NED lower electricity bills?

Will we get tax revenue from it?

Are there better options?

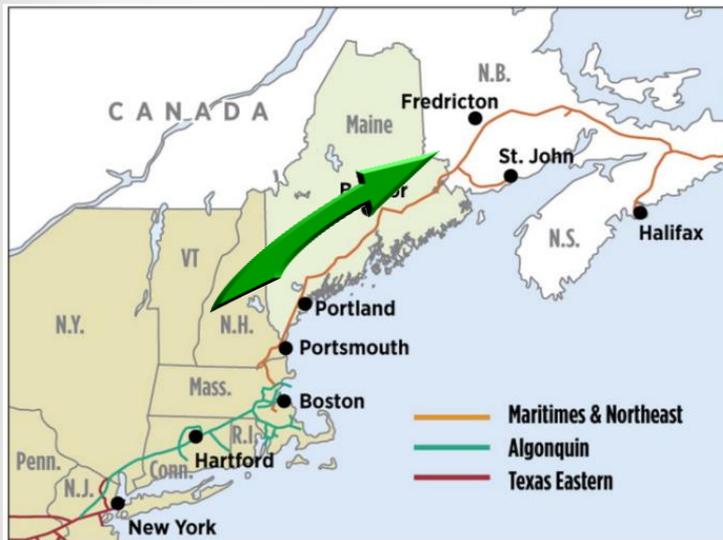
Citizens' concerns

Summary

Will NED Lower Gas Prices?

NED will carry up to 2.2 Bcf/day. New England uses a TOTAL of 3.4 Bcf/day and that number has been consistent for several years. Projections show the New England region (mostly MA) will need at most an additional .6 Bcf/day. **Where will NED's gas go?**

Gas from Dracut (where NED terminates) can be sent north through the M&NE pipeline to export terminals in Canada.



“Asia, Europe and other markets pay a lot more for natural gas than US customers, so gas companies are chomping at the bit to freeze and ship out fracked gas through export terminals.”⁵

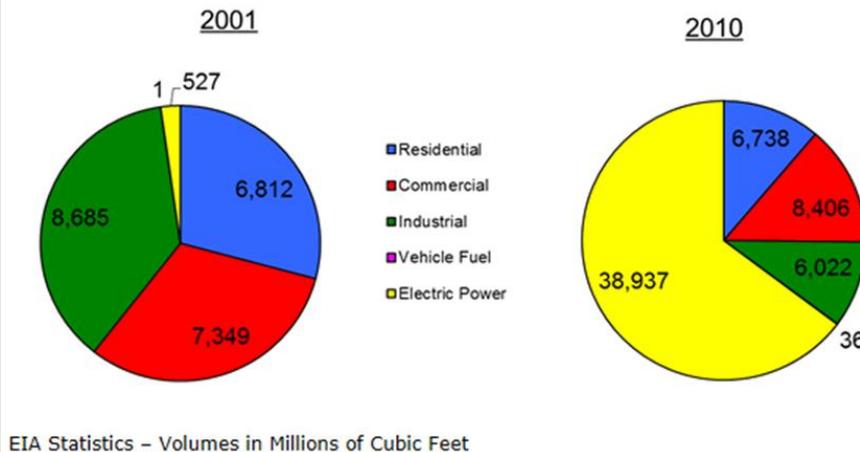
“New Hampshire residents might find themselves competing for fuel with international markets hungry for development and willing to pay. This makes increasing in-state sources of fuel ever more important.”⁶

Perhaps exporting gas doesn't seem like a bad idea, but it's worth noting that an alliance of businesses (Alcoa, Dow, etc.) is so worried about how exports will drive up gas prices that they've formed the organization **America's Energy Advantage** to fight increased exports of natural gas.⁷

Will NED Lower Electricity Bills?

Since 2000, New Hampshire's dependence on natural gas to generate electricity has increased dramatically.

New Hampshire Natural Gas Consumption by Sector



The intent of this increase is to lower electricity bills. The assumption is that if we convert more of our electric generators to natural gas we will save more money. This assumption requires more study.

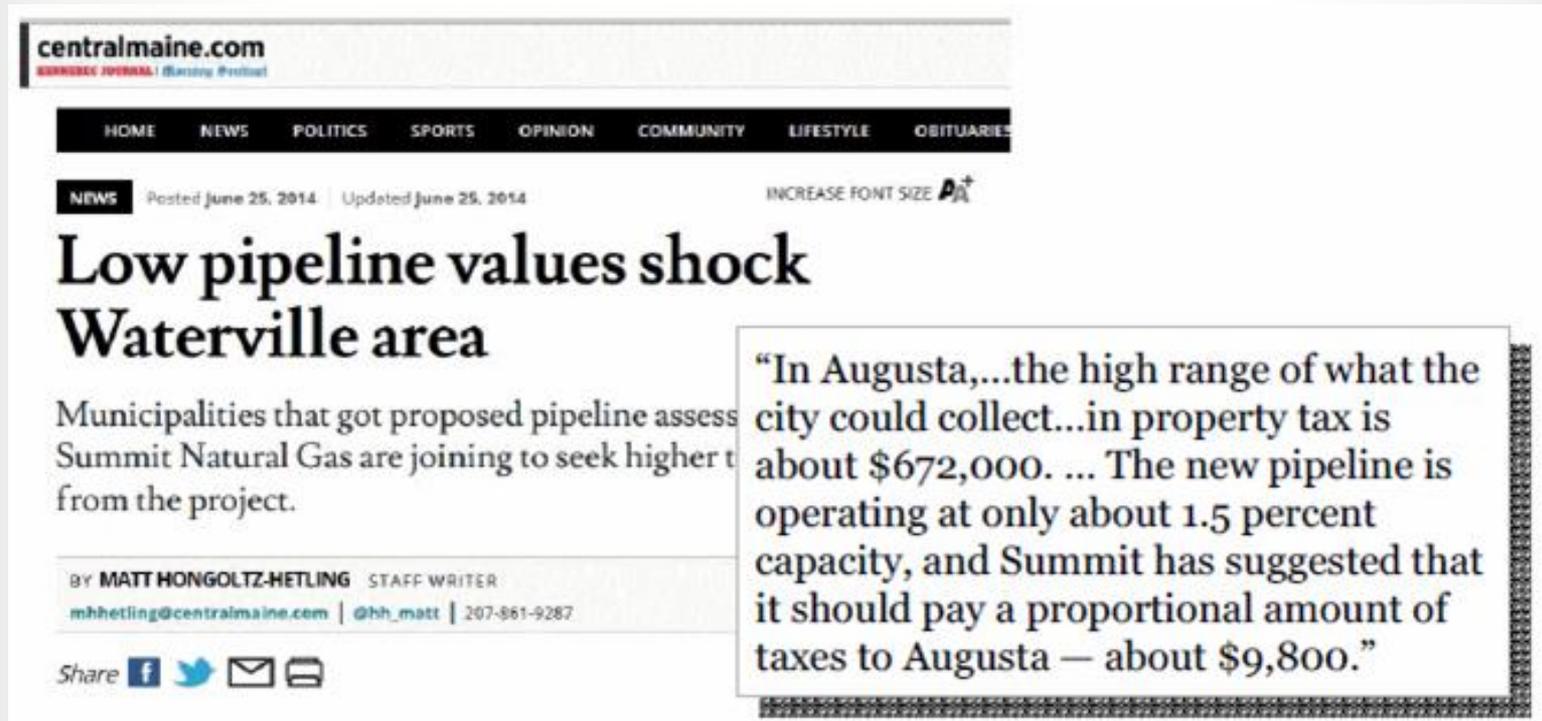
One thing is certain and proven by recent electricity prices:

Encouraging more dependence on natural gas to produce electricity exposes us *to volatile prices for electricity.*

“Because of New England’s heavy reliance on this single fuel source, natural gas typically sets the price for wholesale electricity.”⁸

Will We Get Tax Revenue From It?

- Possibly get \$450,000 in tax payments when fully utilized.¹
- Offset by reduced property values of adjacent homes and potentially reduced state aid to the school district for ‘adequacy.’
- Reduced over 15 – 30 years due to depreciation?
- Subject to change if the line is not fully utilized?



The image is a screenshot of a news article from the website centralmaine.com. The article is titled "Low pipeline values shock Waterville area" and is dated June 25, 2014. The author is Matt Hongoltz-Hetling, a staff writer. The article discusses the impact of a proposed pipeline on property values in the Waterville area, specifically mentioning that municipalities like Augusta are seeking higher tax revenue. A quote from the article states: "In Augusta,...the high range of what the city could collect...in property tax is about \$672,000. ... The new pipeline is operating at only about 1.5 percent capacity, and Summit has suggested that it should pay a proportional amount of taxes to Augusta — about \$9,800."

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NEWS Posted June 25, 2014 Updated June 25, 2014 INCREASE FONT SIZE A+

Low pipeline values shock Waterville area

Municipalities that got proposed pipeline assess
Summit Natural Gas are joining to seek higher t
from the project.

BY MATT HONGOLTZ-HETLING STAFF WRITER
mhhetling@centralmaine.com | @hh_matt | 207-861-9287

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What is it?

Do we need it?

What's the financial benefit?

Are there better options?

Solution #1: LNG

Solution #2: Expand existing pipelines

Solution #3: Stick with our long-term strategy

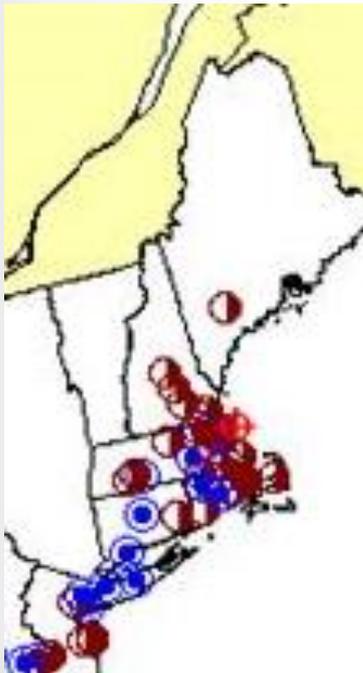
Citizens' concerns

Summary

Solution #1: Use LNG For Peak Hours

During peak hours, electric generators use liquefied natural gas (LNG) to supplement their supplies.

“Owning or contracting for LNG peaking capacity has been a least-cost solution to meet peak heating demand.” Liz Arangio, Director of Gas Supply Planning, NationalGrid ¹⁰



According to Tony Scaraggi, vice president of Distrigas, in describing covering peak demand:

“That's equivalent to like, two and a half to three LNG tankers coming in. So you gotta compare that to the cost of a \$2 to \$3 billion pipeline.” Scaraggi believes burning LNG gas during peak hours is cheaper than building an “oversized pipeline.” ¹¹

- = LNG Peaking Facility
- = Satellite LNG Peaking Facility
- ⊕ = LNG Import Terminal

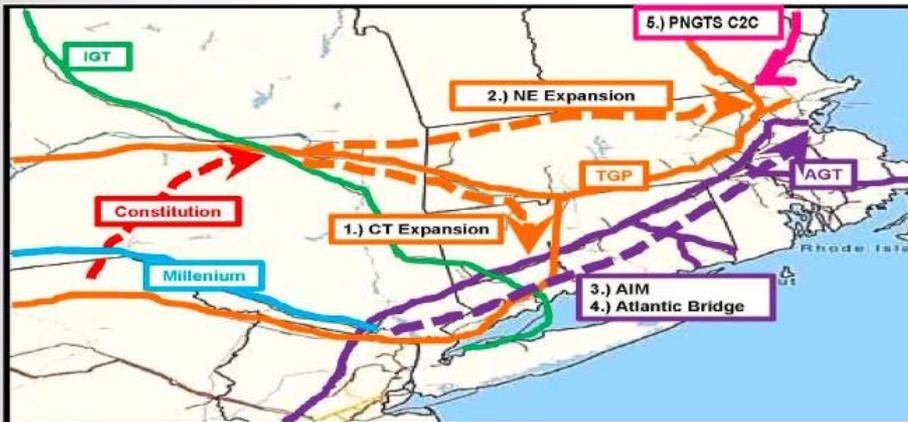
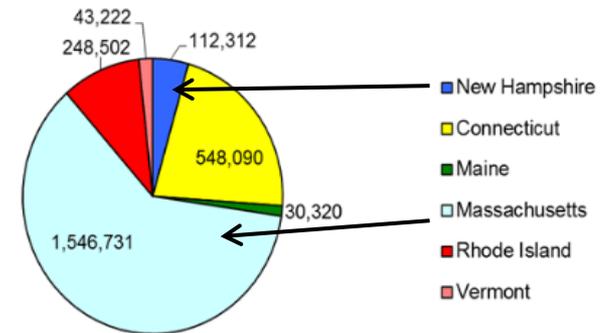
Solution #2: Expand Existing Pipelines

Several pipeline expansion projects are currently in the approval process. These could be particularly helpful for our neighbors to the south, who are much more dependent on natural gas.

Current proposals include:

- Tennessee CT Expansion (0.072 bcf) – Est. In-service Nov. 2016
- Algonquin AIM (0.342 bcf) – Est. In-service Nov. 2016
- Algonquin – Atlantic Bridge (up to 0.6 bcf) – Proposed Est. In-service Nov. 2017

New England Natural Gas Consumers
EIA Statistics for 2010



These expansions are more in line with actual regional need, are less likely to result in competition from export prices, and will be in the existing pipeline footprint.

Solution #3: Stick With Our Long-Term Strategy

In their 10-year State of Energy Strategy (September 2014)⁶, the **New Hampshire Office of Energy & Planning** stated that our path to a more secure energy future was primarily

market reforms

and

grid modernization

“We remain susceptible to volatile international fuel markets and severe weather patterns that can disrupt our energy supplies in an instant. Increasing our resilience and our security by modernizing our infrastructure, enhancing our efficiency, and diversifying our fuel and transportation choices will help us meet our energy goals while providing economic opportunities to the state.”⁷

What is it?

Do we need it?

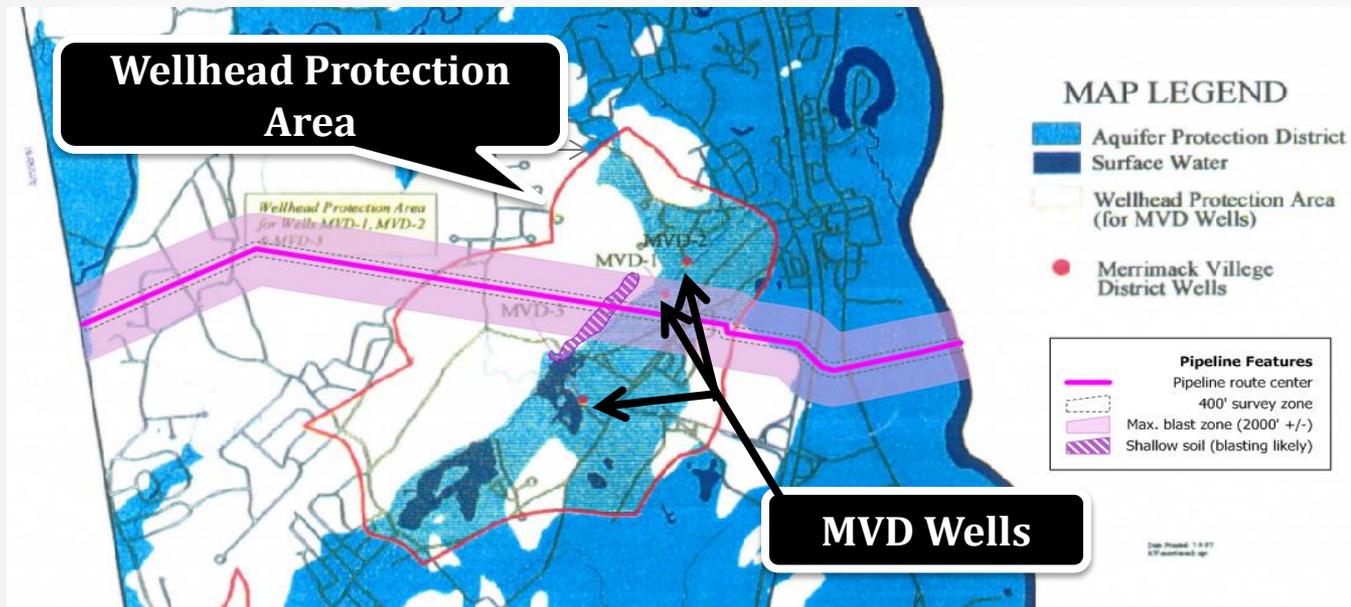
What's the financial benefit?

Are there better options?

Citizens' concerns
Water supply concerns
Safety concerns
Property owners' concerns

Summary

Water Supply Concerns



- The MVD operates seven high yield wells (six active and one inactive), three of which are located in the Naticook Brook aquifer.
- The Naticook Brook aquifer is Merrimack's most important groundwater resource, supplying over half of Merrimack's total drinking water supply.¹²

Is It Safe?

All forms of energy carry some risk. Oil can spill, nuclear can leak, windmills can hurt birds.

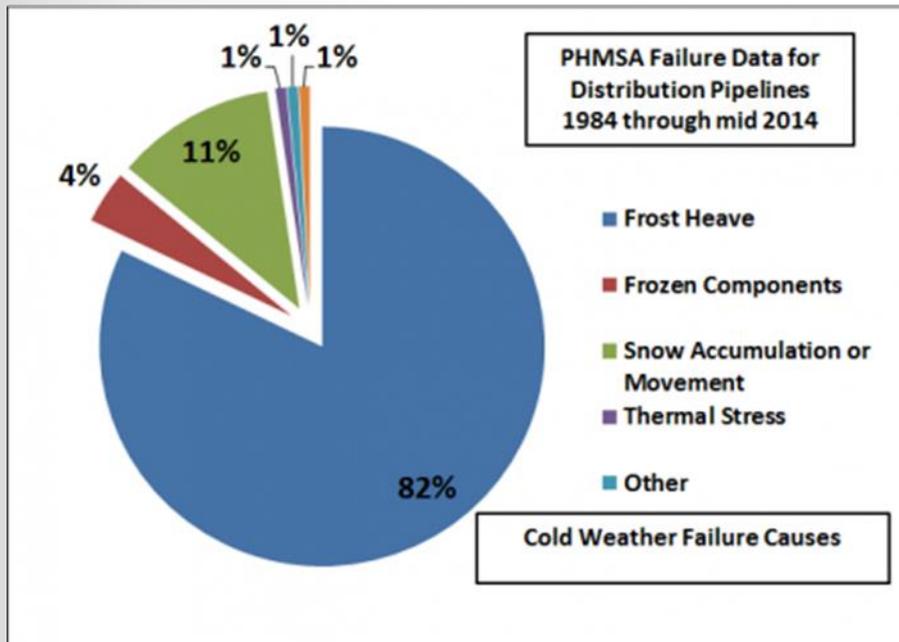
Table 5: Incidents, Fatalities, Injuries, and Property Damage by Pipeline System (1992-2011)

	Incidents	Fatalities	Injuries	Property Damage as Reported
Natural Gas Gathering	212	0	12	\$357,080,128
Natural Gas Transmission	1845	45	216	\$1,534,724,575
Natural Gas Distribution	2644	298	1165	\$942,404,551
Hazardous Liquid	5569	41	171	\$2,695,828,774

Source: "All Reported Incidents," The United States Department of Transportation Pipeline and Hazardous Materials Safety Administration Office of Pipeline Safety, accessed May 1, 2012, http://primis.phmsa.dot.gov/comm/reports/safety/Allpsi.html?nocache=3087#_all and Manhattan Institute calculations.

With natural gas, the risk is explosions.

"With exposure to cold weather, the pipeline system can be threatened by a number of circumstances that can cause failure in components. Some of these include frost heave, loads on pipeline components due to snow and ice accumulation, thermal stresses due to extreme cold temperatures, and confined expansion of freezing water within components."



Property Owners' Concerns

Residential Property Owners & Abutters Rights

- Eminent domain
- Easement
- Decreased Property Values
- HO Insurance & Mortgage
- Well Water & Foundations
- Removal of Power Line Buffer Zones (trees)

Horse Hill Nature Preserve

- Wetlands
- Endangered species
- Vegetation management (herbicides)
- \$4.2 million dollars to purchase
- Countless volunteer hours to maintain

Safety

- Potential Impact Area
- Kinder Morgan Safety Record

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Citizens' Concerns

Summary

Pros and Cons
Questions for the Town Council
Resources
References

So... Is NED Good for NH?

Pros

- Offers one possible solution to providing extra natural gas during peak hours
- Yields property tax revenue for several years (offset by loss of property values)

Cons

- Alternative sources for peak hours exist
- Not in sync with our long-term energy plans
- Towns along the route carry all the risk and reap only indirect benefit
- Tax revenues decline over time
- Rural character threatened

***The essential question is:
Does it make sense to build a pipeline across
NH to provide gas for a few hours a year?***

Questions for the Town Council

- Is the Town Council considering forming a task force to research how the town might be impacted by the pipeline? Research might include potential impacts on:
 - Water quality
 - Conservation land
 - Property owners

- Is the Town Council or staff developing a Communication Plan to ensure that residents and businesses are aware of the pipeline and how it might affect the town?

- Is the Town Council planning to send a letter to FERC expressing a formal stance regarding the project? (March 18th deadline must be assumed for now.)

Resources

For more information on the NED pipeline:

- Town of Merrimack website - <http://www.merrimacknh.gov/KinderMorganInformation>
- NH Pipeline Awareness- www.nhpipelineawareness.org
- No Fracked Gas in MA- <http://www.nofrackedgasinmass.org/>
- Merrimack Citizens for Pipeline Information- <https://www.facebook.com/groups/Merrimackpipelineinfo/>

References

- ¹ Northeast Energy Direct Project, Draft Environmental Report. Kinder Morgan, December 2014. <http://www.merrimacknh.gov/KinderMorganInformation>
- ² A Model For Sizing High Consequence Areas Associated With Natural Gas Pipelines , Gas Research Institute and C-FER Technologies, 2000 <http://www.pipelinesafetytrust.com/docs/C-FerCircle.pdf>
- ³ New Hampshire 10-Year State Energy Strategy, New Hampshire Office of Energy & Planning, Appendix A. September 2014. <http://www.nh.gov/oep/energy/programs/documents/energy-strategy-appendicies-a-c.pdf>
- ⁴ Competitive Energy Services. Assessing Natural Gas Supply Options for New England and their Impacts on Natural Gas and Electricity Prices. February 7, 2014. http://competitive-energy.com/docs/2014/02/CES_REPORT_NaturalGasSupply_20140131_FINAL.pdf
- ⁵ Struck, Doug. The Boston Globe, June 11, 2014. <http://www.bostonglobe.com/lifestyle/2014/06/11/the-fight-over-liquefied-natural-gas/e9nfnkQvte8VNhxhVoqvtO/story.html>
- ⁶ New Hampshire 10-Year State Energy Strategy, New Hampshire Office of Energy & Planning, September 2014. <http://www.nh.gov/oep/energy/programs/documents/energy-strategy.pdf>
- ⁷ www.americasenergyadvantage.org
- ⁸ ISO Newswire, Guide to the Grid. <http://isonewswire.com/guide-to-the-grid>
- ¹⁰ Arangio, Liz, Director of Gas Supply Planning, NationalGrid, May 1, 2014 http://northeastgas.org/pdf/e_arangio_natgrid.pdf
- ¹¹ NPR, New England Electricity Prices Spike as Gas Pipelines Lag, November 5, 2014, <http://www.npr.org/2014/11/05/361420484/new-england-electricity-prices-spike-as-gas-pipelines-lag>
- ¹² U.S. Geological Survey. Hydrogeology of Stratified-Drift Aquifers and Water Quality in the Nashua Regional Planning Commission Area. South-Central New Hampshire. 1997. <http://pubs.usgs.gov/wri/1986/4358/report.pdf>.

References (con't)

Additional sources used for statistics and graphs:

Chart on pg 8: <http://www.eia.gov/state/?sid=NH#tabs-4>

Electricity statistic on pg 9: <http://www.eia.gov/state/?sid=NH#tabs-1>

Graph on pg 9: Competitive Energy Services. Assessing Natural Gas Supply Options for New England and their Impacts on Natural Gas and Electricity Prices. February 7, 2014.

http://competitive-energy.com/docs/2014/02/CES_REPORT_NaturalGasSupply_20140131_FINAL.pdf

Graph on pg 10: New Hampshire 10-Year State Energy Strategy, New Hampshire Office of Energy & Planning, Appendix A. September 2014.

<http://www.nh.gov/oep/energy/programs/documents/energy-strategy-appendicies-a-c.pdf>